

CLAIMS

What is claimed is:

1 1. A method of protecting tin solderable surfaces comprising:
2 providing a solderable surface having tin oxide thereon;
3 applying complexing agent to said solderable surface; and
4 forming reaction product with said tin oxide and said complexing agent,
5 wherein said reaction product decomposes to tin oxide and volatile products upon being
6 exposed to reflow conditions.

1 2. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent forms a reaction product with tin.

1 3. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent and tin react to form a tin carboxlyate.

1 4. A method of protecting tin solderable surfaces, according to claim 1, wherein
2 forming said reaction product with said tin oxide and said complexing agent comprises
3 heating.

1 5. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 reaction product decomposes to volatile products where subject to reflow temperatures.

1 6. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent comprises pimelic acid.

1 7. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent further comprises flux.

1 8. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent comprises sebacic acid.

1 9. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 complexing agent is selected from the group consisting of dicarboxylic acids, dibasic acids,
3 and complexing agents.

1 10. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 reaction product comprises tin pimelate.

1 11. A method of protecting tin solderable surfaces, according to claim 1, wherein said
2 reaction product comprises tin dicarboxylate.

1 12. A method of joining tin-solderable surfaces comprising:
2 providing a first tin solderable surface and a second tin solderable surface,
3 each said surface having tin oxide thereon;
4 applying complexing agent to said at least one tin solderable surface;
5 forming reaction product with said tin oxide and said complexing agent,
6 wherein said reaction product decomposes to tin oxide and volatile products upon being
7 exposed to reflow conditions;
8 intimately contacting a first tin solderable surface with a second tin
9 solderable surface; and
10 reflowing said first and said second surfaces.

1 22. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent and tin react to form tin carboxylate.

1 23. A method of protecting tin solderable surfaces, according to claim 1, wherein
2 applying complexing agent comprises vapor phase deposition of complexing agent.

1 24. A method of protecting tin solderable surfaces, according to claim 1, wherein
2 complexing agent comprises adipic acid.

1 25. A method of protecting tin solderable surfaces, according to claim 12, wherein
2 forming said reaction product with said tin oxide and said complexing agent comprises
3 heating.

1 26. A method of joining tin-solderable surfaces, according to claim 12, wherein
2 applying complexing agent comprises vapor phase deposition of complexing agent.

1 27. A method of protecting tin solderable surfaces, according to claim 12, wherein said
2 complexing agent comprises sebacic acid.

1 28. A method of protecting tin solderable surfaces, according to claim 12, wherein
2 complexing agent comprises adipic acid.

1 29. The structure containing reaction product according to claim 1.

1 30. The structure containing at least one solder joint formed according to claim 1.

1 31. The structure containing reaction product according to claim 12.

1 13. A method of joining tin-solderable surfaces, according to claim 12, wherein said first
2 tin solderable surface is a chip solder bump surface; and wherein said second tin solderable
3 surface; is a laminate solder pad.

1 14. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent forms a reaction product with tin.

1 15. A method of joining tin-solderable surfaces, according to claim 12, wherein forming
2 said reaction product with said tin oxide and said complexing agent comprises heating.

1 16. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent comprises pimelic acid.

1 17. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent further comprises flux.

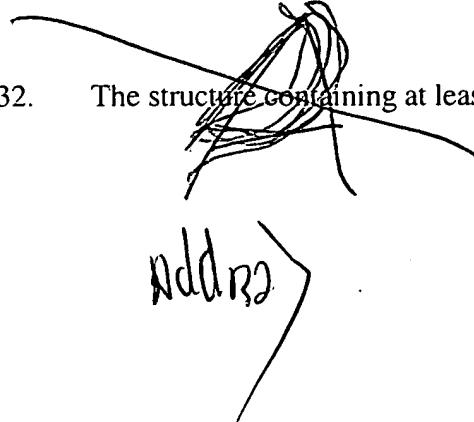
1 18. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 complexing agent is a dicarboxylic acid.

1 19. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 reaction product comprises tin pimelate.

1 20. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 reaction product comprises tin dicarboxylate.

1 21. A method of joining tin-solderable surfaces, according to claim 12, wherein said
2 reaction product decomposes to volatile products where subject to reflow temperatures.

1 32. The structure containing at least one solder joint formed according to claim 12.



addr2